

## 28. A SYSTEMATIC ACCOUNT OF CHLOROCOCCALES OF HASSAN DISTRICT, KARNATAKA STATE, INDIA

(With three plates)

In an extensive systematic study on the freshwater algae of Karnataka State it was observed that waters of Hassan District supported a large number of Chlorococcales belonging to the families, Hydrodictyaceae, Oocystaceae, Dictyosphaeriaceae, Selenastraceae, Coelastraceae and Scenedesmaceae. All the 32 species are reported for the first time from this area.

Hassan District is situated in the west of Karnataka State lying between 12° 32'-13° 33' N and 75° 23'—76° 38' E, with an area of 5855 sq. km. Average rainfall varies from 38 cm to 610 cm and Koalin, Felspar, Quartz, Kanker, and Haemetite are the main soil types. Collections were made from Arsi-kere, Sakleshpur, Belur, Arkalgood and Hassan proper so as to cover the entire district, during the month of June, 1976.

The length (L), Breadth (B) and the diameter (D) are given in microns ( $\mu$ ). Col. H—1 to 8 refers to the numbers given to the collections made in Hassan District.

## Family: HYDRODICTYACEAE

## Sub-Family: Hydrodictyoidae

Genus: *Pediastrum* Meyen, 1829, p. 772.

*P. angulosum* (Ehr.) Menegh. (Pl. I, Fig. 1) Philipose 1967; p. 119, Fig. 39.

Cells 11.0-12.8  $\mu$  in D, colony 120-122  $\mu$  in D. (col. H-5).

*P. duplex* Meyen. var. *clathratum* (A. Br.) Lagerh. (Pl. I, Fig. 2) Philipose 1967; p. 122, Fig. 43 e.

Cells 15-16.25  $\mu$  in D and Colonies 111.18-114.25  $\mu$  in D. (col. H-4).

*P. tetras* (Ehr.) Ralfs. var. *tetraodon* (Corda)

Rabenh. (Pl. I, Fig. 3) Philipose 1967; p. 130, Fig. 45 e.

Cells 13.75-16.25  $\mu$  in D. and Colonies 52.0-55.0  $\mu$  in D. (col. H-1).

*P. tetras* (Ehr.) Ralfs. var. *apiculatum* Fritsch. (Pl. I, Fig. 4) Philipose 1967; p. 130, Fig. 45 h.

Cells 7.2-8.75  $\mu$  in D. colonies 14.0-16.25  $\mu$  in D. (col. H-3).

Genus *Sorastrum* Kützing, 1845, p. 144.

*S. spinulosum* Naegeli (Pl. I, Fig. 5) Philipose 1967; p. 133, Fig. 47.

Colony of 8 cells. Cells 6.8-8.0  $\mu$  in L, 9.25-10.0  $\mu$  in B and spine 3.75  $\mu$  in L. (col. H-1).

## Sub-Family: Tetraedronoideae

Genus: *Tetraedron* Kützing, 1845, p. 129.

*T. regulare* Kütz. (Pl. I, Fig. 6) Philipose 1967; p. 147, Fig. 60 a-d & f.

Cells 24.20-26.25  $\mu$  in D. and Spines 5  $\mu$  in L. (col. H-1).

Genus *Closteridium* Reinsch 1888, p. 510.

*C. siamensis* (W. et G. S. West) G. M. Smith (Pl. I, Fig. 7) Philipose 1967; p. 163, Fig. 76. Cells 6.25-8  $\mu$  in B, 15.0-17.0  $\mu$  in L and spines 6  $\mu$  in L. (col. H-1).

The form is much smaller than the type.

## Family OOCYSTACEAE

## Sub-Family Oocystoideae

Genus *Gleotaenium* Hansgirg, 1890, p. 10. *G. loitlesbergerianum* Hansg. (Pl. I, Fig. 8) Philipose 1967; p. 179, Fig. 88.

Colony 40-41. 25  $\mu$  in D, 28.25-29.0  $\mu$  in thickness and Cells 11.75-12.5  $\mu$  in D. (col. H-3).

Genus *Nephrocystium* Naegeli, 1849, p. 79. *N. obesum* W. et. G. S. West. (Pl. II, Fig. 1) Philipose 1967; p. 190, Fig. 106.

Cells 39.2-40.0  $\mu$  in L and 20.25-21.56  $\mu$  in B. Colony 83.16-84  $\mu$  long and 70.84-72.0  $\mu$  in B. (col. H-3).

Family DICTYOSPHAERIACEAE

Genus *Dimorphococcus* A. Braun 1855, p. 44.

*D. lunatus* A. Braun (Pl. II, Fig. 2) Philipose 1967; p. 205, Fig. 115.

Cells 24.64-25.14  $\mu$  in L and 8.75-10.25  $\mu$  in B. (col. H-1).

Family SELENASTRACEAE

Genus *Ankistrodesmus* Corda, 1838, p. 196. *A. falcatus* (Corda) Ralfs; (Pl. II, Fig. 3) Philipose 1967; p. 212, Fig. 121.

Cells 2.00-2.15  $\mu$  in B and 45.0-47  $\mu$  in L. (col. H-1).

*A. convolutus* Corda. (Pl. II, Fig. 7) Philipose 1967; p. 212, Fig. 122.

Cells 2.5-3.75  $\mu$  in B. and 29.75-31.25  $\mu$  in L. (col. H-1).

Genus *Selenastrum* Reinsch, 1867, p. 64.

*S. gracile* Reinsch (Pl. II, Fig. 4) Philipose 1967; p. 220, Fig. 128.

Cells 3.75-4.75  $\mu$  in B. in and 13.0-25.0  $\mu$  in L. (col. H-4).

Genus *Kirchneriella* Schmidle, 1893, p. 16 (83)

*K. lunaris* (Kirchner) Moebius. (Pl. II, Fig. 5). Philipose 1967; p. 223, Fig. 131.

Cells 6.0-8.0  $\mu$  in B. and 8.75-12.50  $\mu$  L. (col. H-1).

Family COELASTRACEAE

Genus *Coelastrum* Naegeli, 1849, p. 97.

*C. cambricum* Archer var. *intermedium* (Bohlin) G. S. West (Pl. II, Fig. 8) Philipose 1967; p. 230, Fig. 138 b. Cells 7.5-8.25  $\mu$  in D and Colony 32.0-50.0  $\mu$  in D. (col. H-3).

Family SCENEDESMACEAE

Sub-Family Crucigenioideae

Genus *Crucigenia* Morren 1830, p. 404.

*C. irregularis* Wille. (Pl. II, Fig. 6) G. W. Prescott 1951; p. 790, Pl. 65, Fig. 6.

Cells 8.75-9  $\mu$  in L and 3.75-4.24  $\mu$  in B. (col. H-2).

Sub-Family Scenedesmoideae

Genus *Scenedesmus* Meyen, 1829, p. 774.

*S. dimorphus* (Turp.) Kuetz; f. *tortus* G. M. Smith, (Pl. III, Fig. 1) Philipose 1967, p. 250, Fig. 160 d.

Cells 2.0-2.30  $\mu$  in B. and 16.25-17.50  $\mu$  in L. (col. H-7).

*S. bijugatus* (Turp.) Kuetz., (Pl. III, Fig. 2) Philipose 1967; p. 255, Fig. 164 f.

Cells 10-11.75  $\mu$  in L and 3.25-3.75  $\mu$  in B. (col. H-8).

*S. bijugatus* (Turp.) Kuetz. var. *graevenitzii* (Bernard) Comb. Nov., (Pl. III, Fig. 3) Philipose 1967; p. 255, Fig. 164 a. b.

Cells 3.75-4.7  $\mu$  in B and 13.0-13.75  $\mu$  in L. (col. H-4).

*S. bijugatus* (Turp.) Kuetz. f. *irregularis* Wille (Pl. III, Fig. 6) Philipose 1967; p. 255, Fig. 164 i, m.

Cells 6.25-7.50  $\mu$  in B. and 15.0-15.75  $\mu$  in L. (col. H-3).

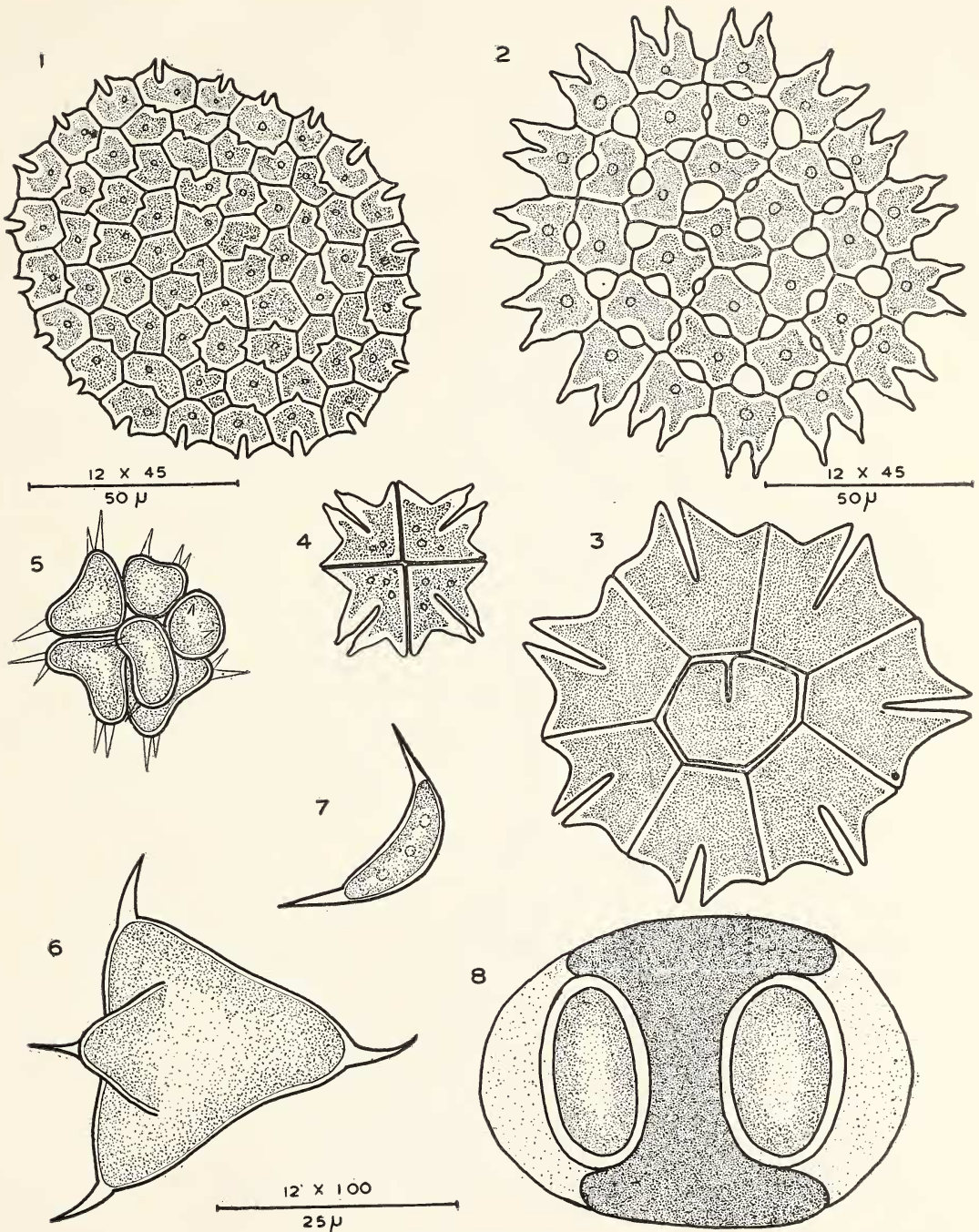
*S. bijugatus* (Turp.) Kuetz. var. *flexuosus* Lemm. (Pl. III, Fig. 4) Philipose 1967; p. 255, Fig. 164 1.

Cells 4-4.75  $\mu$  in B and 7.75-8.25  $\mu$  in L. (col. H-3).

*S. arcuatus* (Lemm) Lemm. (Pl. III, Fig. 7) Philipose 1967; p. 258, Fig. 166 a-c.

Cells 6.0-6.25  $\mu$  in B and 14.25-15  $\mu$  in L. (col. H-1).

*S. arcuatus* (Lemm) Lemm. var. *platydisca* (Pl. III, Fig. 5) G. W. Prescott 1951; p. 275, pl. 62. Figs. 10-12.



Figs. 1-8. 1. *Pediastrum angulosum* (Ehr.) Menegh.; 2. *P. duplex* Meyn. Var. *clathratum* (A. Br.) Lagerh.; 3. *P. tetras* (Ehr.) Ralfs. var. *tetraodon* (Corda) Rabenh.; 4. *P. tetras* (Ehr.) Ralfs. var. *apiculatum* Fritsch.; 5. *Sorastrum spinulosum* Naegeli.; 6. *Tetraedron regulare* Kütz.; 7. *Closteridium siamensis* (W. et G. S. West); 8. *Gloeotaenium loitlesbergerianum* Hansg.